Using the Attunity Legacy Adapter with BEA WebLogic

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The Attunity Legacy Adapter

This readme file contains the following:

Introduction

Attunity Connect provides a peer-to-peer distributed data and application access infrastructure, enabling applications to access and integrate data from heterogeneous data sources and from other applications.

Attunity Connect provides an adapter for BEA WebLogic® Integration™, enabling enterprises to unite applications and data from more than 30 data sources on more than 20 computing platforms, including OS/390, OS/400, Compaq NonStop, OpenVMS, UNIX and Windows using J2EE Connector Architecture (JCA).

- The Attunity Legacy Adapter provides a JCA frontend to unite applications and data. You can also use The Attunity Connect JDBC driver, to connect to Attunity Connect from BEA WebLogic to access data sources on platforms supported by Attunity Connect.

The adapter can be used with any version of Attunity Connect from version 3.1.

Installation Instructions

Installing the Attunity Legacy Adapter

The Attunity Legacy Adapter is provided in zip files:

- **WebLogic Application Integration version 7**
  attunityLegacyAdapterForBeaV7.zip for Windows platforms and attunityLegacyAdapterForBeaV7.tar for UNIX platforms.
- **WebLogic Application Integration version 2.1**
  attunityLegacyAdapterForBeaV21.zip for Windows platforms and attunityLegacyAdapterForBeaV21.tar for UNIX platforms.
- **WebLogic Application Integration version 2.0**
  attunityLegacyAdapterForBea.zip for Windows platforms and attunityLegacyAdapterForBea.tar for UNIX platforms.
  - ❖ This version of the Attunity Legacy Adapter is available on request.

▶ **To install the adapter:**

1. Create a root directory to install the Attunity Legacy Adapter. (In this document this directory is referred to as ***attunity***.)
2. Extract Attunity Legacy Adapter zip into the root directory.

Configuring WebLogic Integration for the Attunity Legacy Adapter

To configure WebLogic Application Integration to work with the Attunity Legacy Adapter, modify the environment and server configuration files to include the Attunity Legacy Adapter.

- ❖ The following procedure is based on WebLogic running under Windows. The procedure is similar for UNIX.

1. Copy the file ATTUNITY_LEGACY_ADAPTER.ear to the applications directory for the WebLogic server you want to run. For example, when using the samples server, copy the file to the following directory:

   \bea\weblogic700\samples\integration\config\samples\applications

   The adapter is automatically deployed and an entry added in the config.xml file when the server is running.
   - ❖ You do not have to shut down the server if it is running.
2. To use the sample environment for the first time, launch the examples and load the database when starting the server.
   - ❖ Start the WebLogic server whose configuration was changed for the Attunity Legacy Adapter.
   - ❖ WebLogic compiles all new modules, prolonging the start up time.

Under Windows

- Click on **Start | Programs | BEA WebLogic Platform 7.0 | WebLogic Integration 7.0 | Integration Examples | Start Server and Launch Examples (with dataloader)**.
  - ❖ On UNIX use the RunSamples.cmd script in the /bea/weblogic700/samples/bin directory.

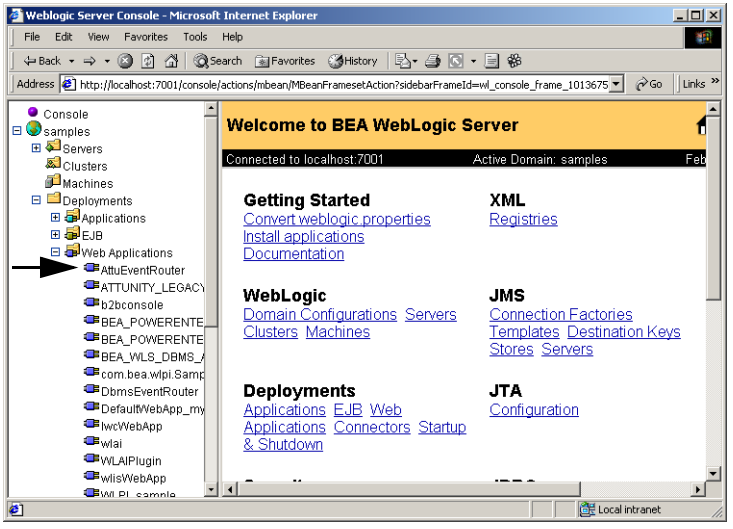
After setting up the environment, you can start the server by clicking **Start | Programs | BEA WebLogic Platform 7.0 | WebLogic Integration 7.0 | Integration Examples | Start Server (only)**.

3. Enter the WebLogic Server Console at the following URL:

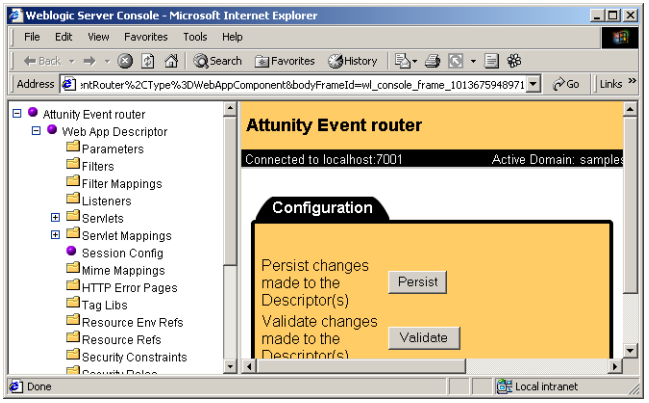
   `http://localhost:7001/console`

   - ❖ If prompted for a username and password, enter the username and password you supplied during the installation of BEA WebLogic.

4. In the Console tree on the left of the screen, click **AttuEventRouter**, which is under Samples/Deployments/Web Applications:



5. Click **Edit Web Application Descriptor...** in the AttuEventRouter window. The Attunity Event router window is displayed:

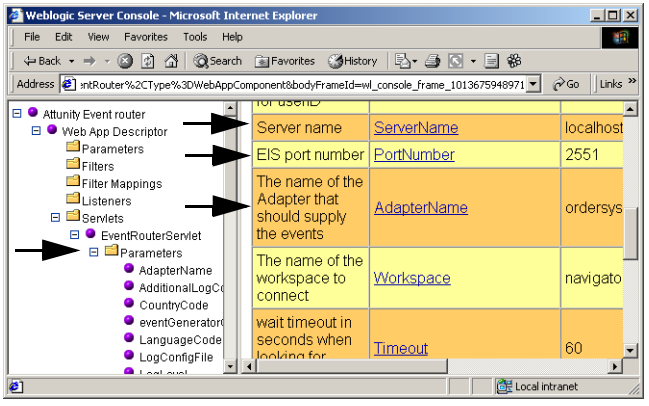


6. In the Attunity Event router tree in the left frame, click **Parameters**, which is under Attunity Event Router/ Web App Descriptor/ Servlets/EventRouterServlet.

7. In the Parameters window, set the configuration of the target server for the adapter.

   In the following diagram the default parameters of the Server Name and Port Number (localhost and 2551) are used along with the ordersys sample adapter, which is supplied with Attunity Connect and located in NAVROOT/Samples/Adapters, where NAVROOT is the location where Attunity Connect is installed.

   - Set the adapter to supply events via the AdapterName parameter. Enter the name of an adapter specified in the Attunity Connect binding configuration for the specified workspace (the default workspace is Navigator and binding configuration is NAV).



8. Click the parameter to set, set the parameter and then click **Apply**.
9. Click the browser **Back** button twice to return to the Parameters window after setting each parameter.
10. Once the Parameters are set, click **Attunity Event Router** at the root of the tree in the left frame and click **Persist** to save the changes.

Troubleshooting the Configuration

If you have a problem with the configuration, check that the following definitions have been specified in the relevant config.xml file. For example, in the ..\config\samples directory under the directory where WebLogic is installed:

```
...
<Application Deployed="true" Name="ATTUNITY_LEGACY_ADAPTER"
             Path="attunity\ATTUNITY_LEGACY_ADAPTER.ear" TwoPhase="true">
  <ConnectorComponent Name="ATTUNITY_LEGACY_ADAPTER"
                      Targets="myserver" URI="ATTUNITY_LEGACY_ADAPTER.rar"/>
  <WebAppComponent Name="AttuEventRouter"
                   SessionMonitoringEnabled="true" Targets="myserver"
                   URI="ATTUNITY_LEGACY_ADAPTER_EventRouter.war"/>
  <WebAppComponent Name="ATTUNITY_LEGACY_ADAPTER_Web"
                   SessionMonitoringEnabled="true" Targets="myserver"
                   URI="ATTUNITY_LEGACY_ADAPTER_Web.war"/>
</Application>
...
```

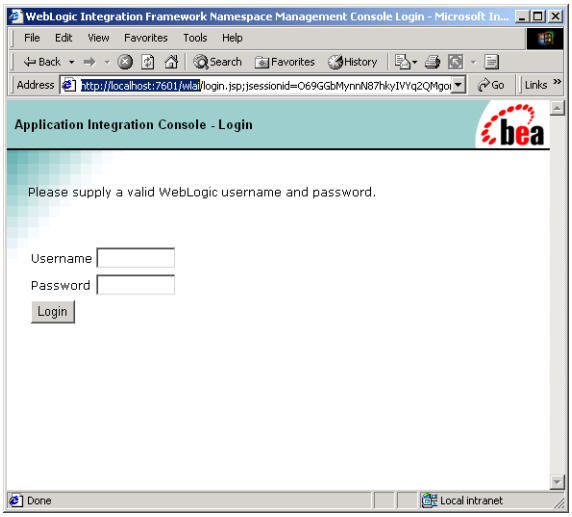
- Where *attunity* in the `Path="attunity"` attribute is the full path of where the Attunity Legacy Adapter is installed.

Using the Attunity Legacy Adapter

Use http://localhost:*serverport*/wlai to start the WebLogic Application Integration module.

- The default is http://localhost:7001/wlai.

Once the WebLogic server has started, the following logon screen is displayed:

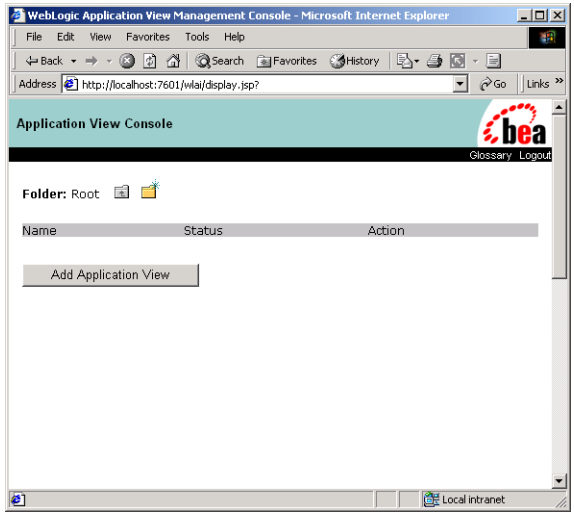


To logon, enter `system` for the username and enter `security` for the password. The system user and the passwords are supplied with the WebLogic installation.

- The user must be defined with access rights to the Adapters group.

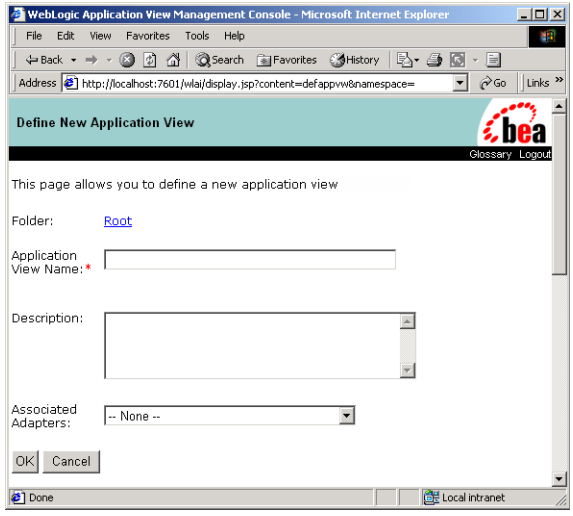
  The username and password fields are case-sensitive.

The following screen is displayed:

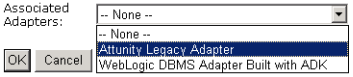


From this screen you can create a directory structure for the application views defined. In the directory you want to define application views, click **Add Application View**.

The following screen is displayed:



You use this screen to start defining application adapters using the Attunity Legacy Adapter:



See "Tutorials", below for examples of how to use the Attunity Legacy Adapter.

Notes When Using the Attunity Legacy Adapter

- An application view cannot be changed when it is deployed. In order to change an application or add services to it, the application view must first be undeployed: access the Application View Console (using the link on the top part of the screen) and access the relevant view. Click **Undeploy** in the Summary for Application View window.
- Services which require parameter input can be defined with predefined values for testing or with values that are entered immediately prior to testing the service.
- Parameters (for example in a WHERE clause or in a stored procedure) are entered using the following syntax:

  [p*n data_type*]

  Thus, use queries similar to the following examples:

  ```
  select * from ds:table where column = [p1 integer]
  ```

  ```
  select * from ds:proc([p1 char], [p2 integer])
  ```

  ❖ Note that each parameter, when there is more than one parameter, is entered separately as [p*n data_type*], with a comma (,) separating the parameters.

Data Types

The following are valid data types:

BIGINT	CHAR
DATE	DECIMAL
DOUBLE	FLOAT
INTEGER	LONGVARCHAR
NUMERIC	REAL
SMALLINT	TIME
TIMESTAMP	TINYINT
VARCHAR	

Tutorials

The following show how to define application views and services for a query application adapter and for an orders application adapter, using events.

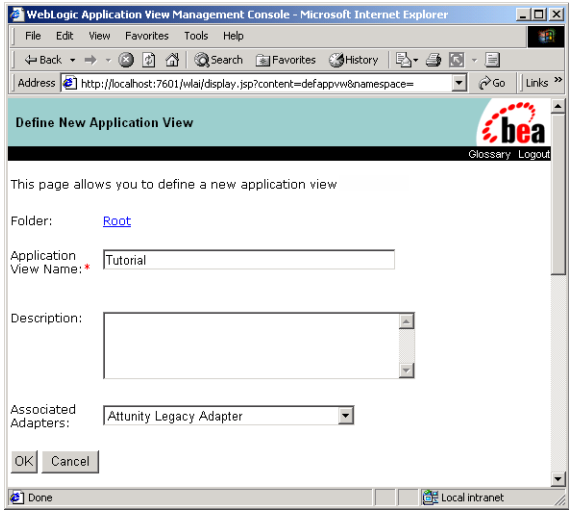
The query application adapter example shows how to build an application view to access and data source defined in the Attunity Connect binding configuration. In the example, the Attunity Connect navdemo demo data source and prc_samples sample stored procedure are used. Both navdemo and prc_samples are provided as part of the Attunity Connect installation.

Using the Attunity Connect query Adapter

The following tutorial shows how to build a WebLogic application view to connect to data sources defined in the binding configuration, using the Attunity Legacy Adapter.

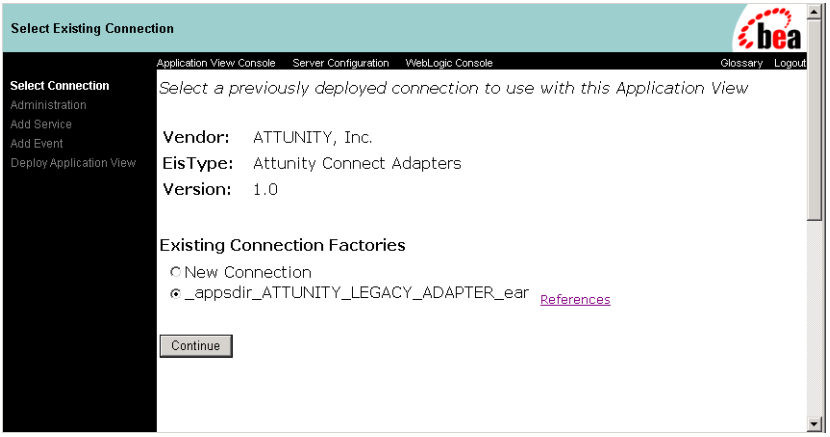
▶ **To connect to data using the Attunity Legacy Adapter and the query Adapter:**

1. In the WebLogic Define New Application View window, supply a name for the adapter and select Attunity Legacy Adapter as the Associated Adapter.

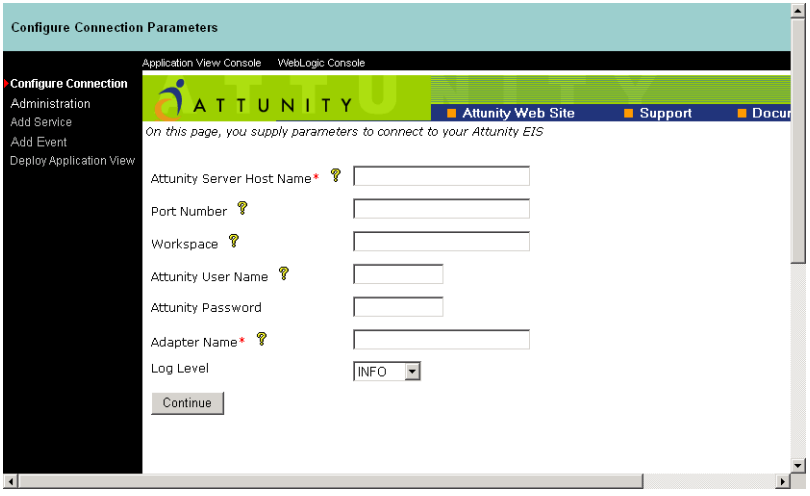


❖ Adding a description is optional.

2. Click **OK**. The following screen is displayed:



3. Select New Connection and click **Continue**. The following screen is displayed:



- Selecting _appsdir_ATTUNITY_LEGACY_ADAPTER_ear creates an application view using the last values entered for the connection parameters (the defaults are localhost and the query adapter).

4. Enter the following parameters:

Attunity Server Host Name – Enter the name or address of the machine where the Attunity Connect daemon is running.

- If the adapter to be accessed is defined in the binding configuration on the local machine, the daemon must be running on this machine. In this case you can specify localhost as the host name.

Adapter Name – Enter `query` (all lowercase) as the name of the adapter. You can also use any other adapter of type query, that has been defined in the binding configuration of the default workspace for the server specified in the Attunity Server Host Name field.

- The query adapter is provided by Attunity Connect as part of the standard installation and does not need specifying in the binding configuration.

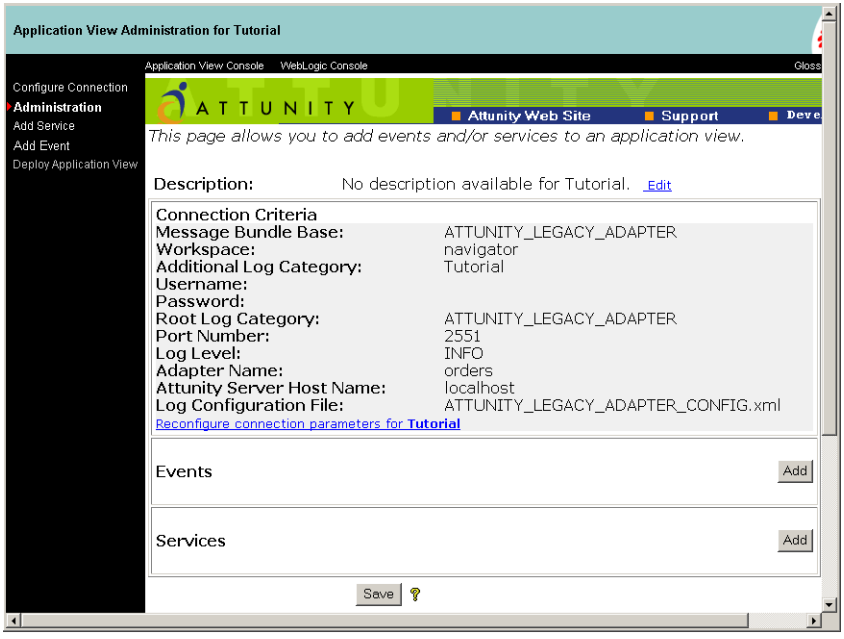
The remaining fields will default to the Attunity Connect defaults (port 2551, Navigator workspace and anonymous access to the workspace).

In this tutorial, an adapter defined in the binding configuration is used to show the use of the connect parameter in the adapter definition. The adapter is called "demo". The binding configuration entry for the adapter is defined as follows:

```
<adapter name='demo' type='query'
         connect='defaulttdp=navdemo'/>
```

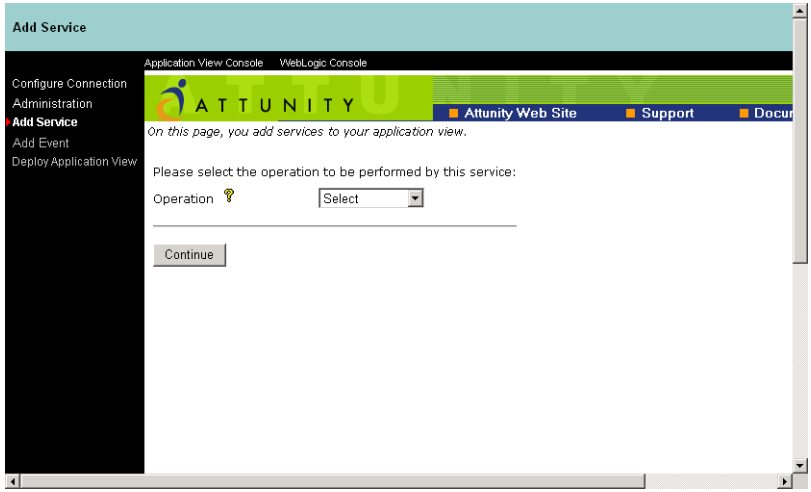
This adapter is of type "query", enabling access to any of the data sources defined in the binding configuration. If the data source is not specified in the SQL, the navdemo data source is assumed.

5. Click **Continue**. The following screen is displayed:



The Application View Administration screen displays the details of the application view entered and provides the opportunity to reconfigure the information and add services to the view.

6. In the Services area, click **Add** to add a service to the application view. The following screen is displayed:



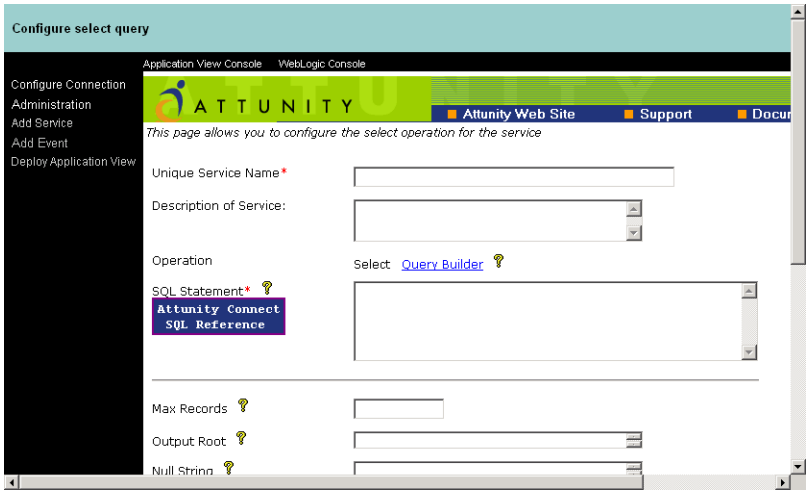
7. Select the operation to be performed by the service:

   Select – Select data from a database.

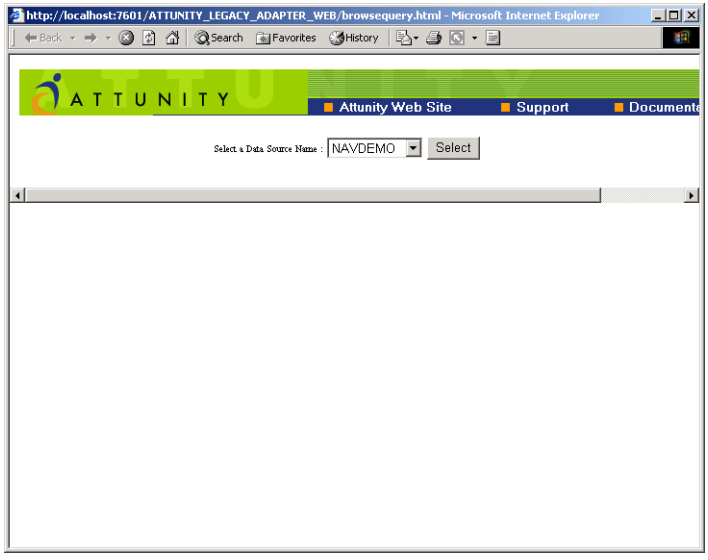
   Batch Update – Insert, Update or Delete data from a database.

   Call Procedure – Call a stored procedure (either a data source called procedure or a procedure defined with the PROCEDURE driver in the binding configuration).

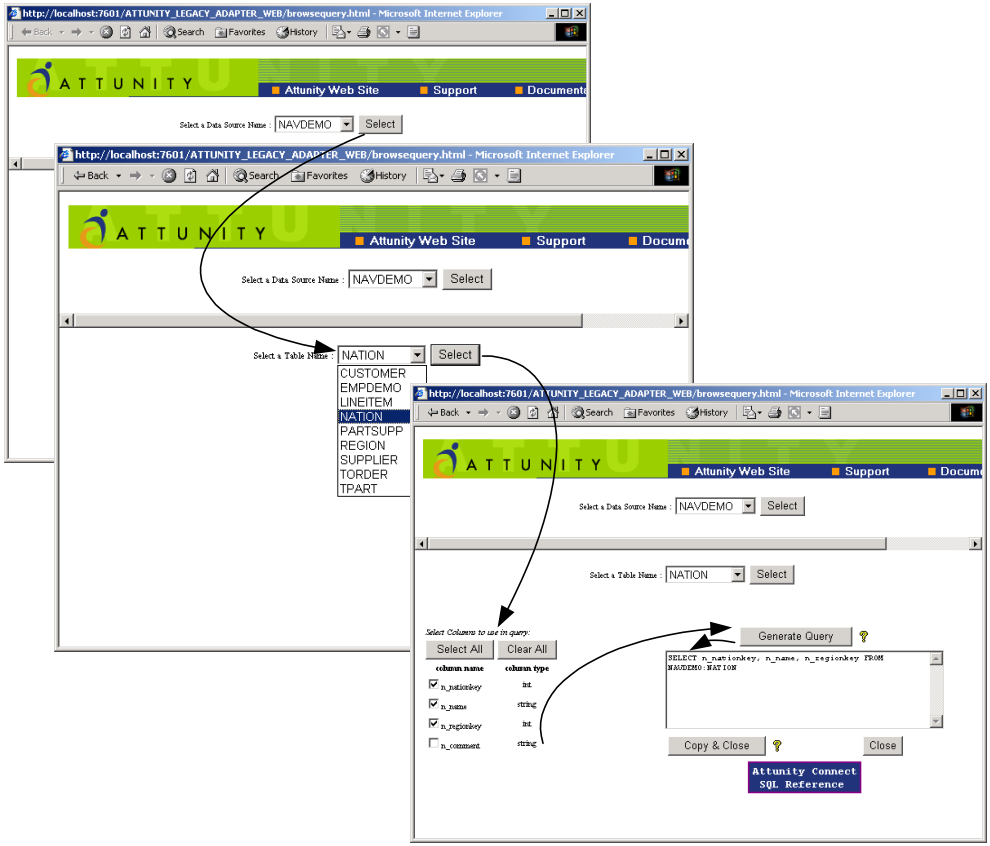
8. Click **Continue**. For Select, the following screen is displayed:



9. In the Configure screen of the operation you selected, enter the following:
   - A unique name for the service.
   - An SQL statement directly or use the Query Builder to help formulate the query:
     - Click on Query Builder. The following screen is displayed:

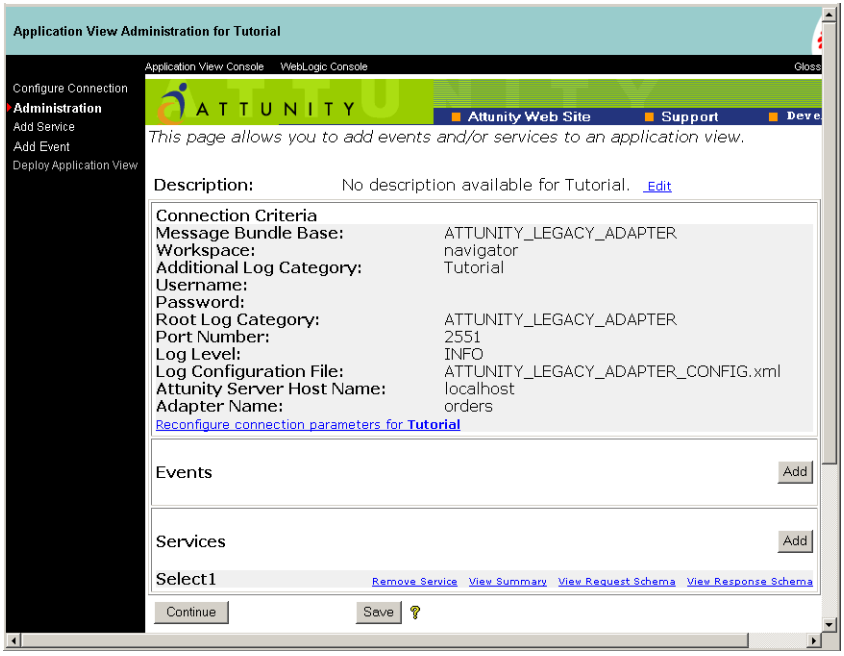


- Choose the data source from the drop-down list (which includes all the data sources listed in the binding configuration) and click **Select**.
- The tables of the selected data source are displayed in a drop-down box. choose a table from this list and click **Select**.
- The columns in the selected table are displayed. Select all the columns or specific columns to be included in the query:



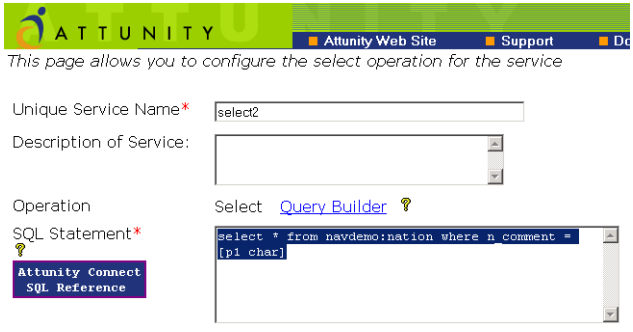
- Click Generate Query. A SELECT statement using the selected information is displayed in the text box.
- Click **Copy & Close** to close this screen and return to the Configure select query screen, copying the query to this screen.

10. Click **Add** at the bottom of the screen. The added service now appears in the Application View Administration screen:



11. Click **Save** to save the definitions and either continue adding services or click **Continue** when you have finished defining all the services for the application view.

    The following is an example of a SELECT statement with a WHERE clause and an input parameter:

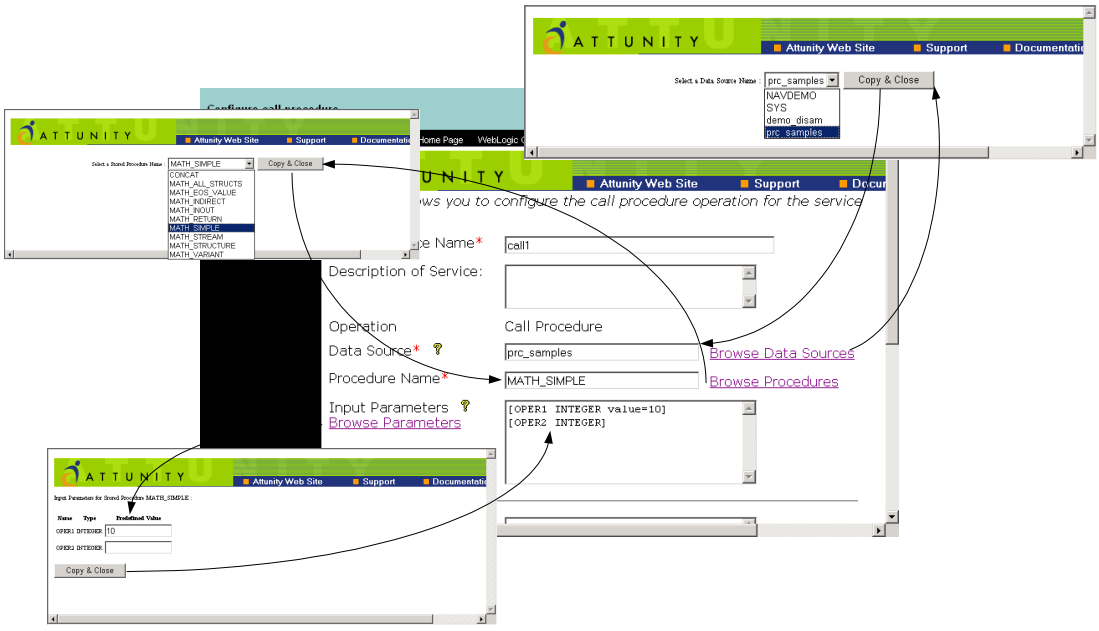


    Note that parameters are specified in square brackets ([]) by specifying a name for the parameter (p1) and the data type (char).

    ❖ The WHERE clause was not generated using the Query Builder.

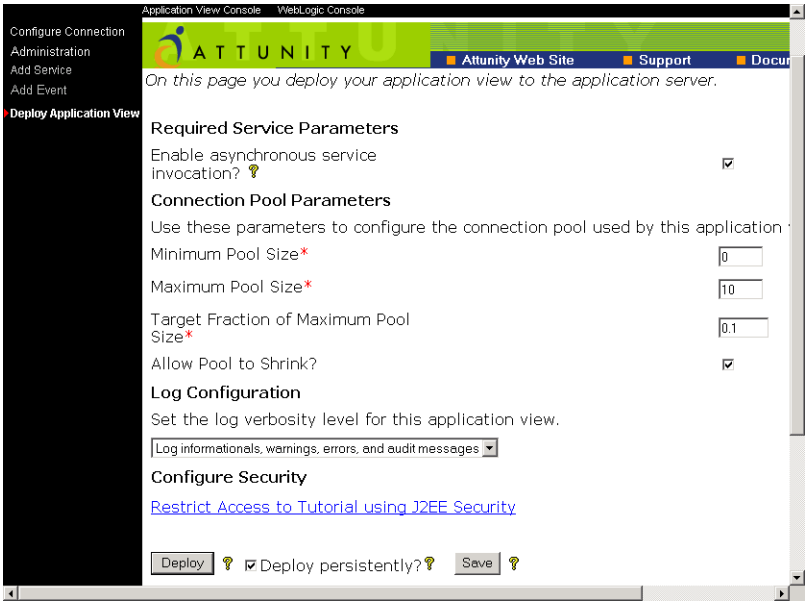
The Batch Update definition screen is similar to the Select screen, without the Query Builder option.

The following is an example call procedure statement:



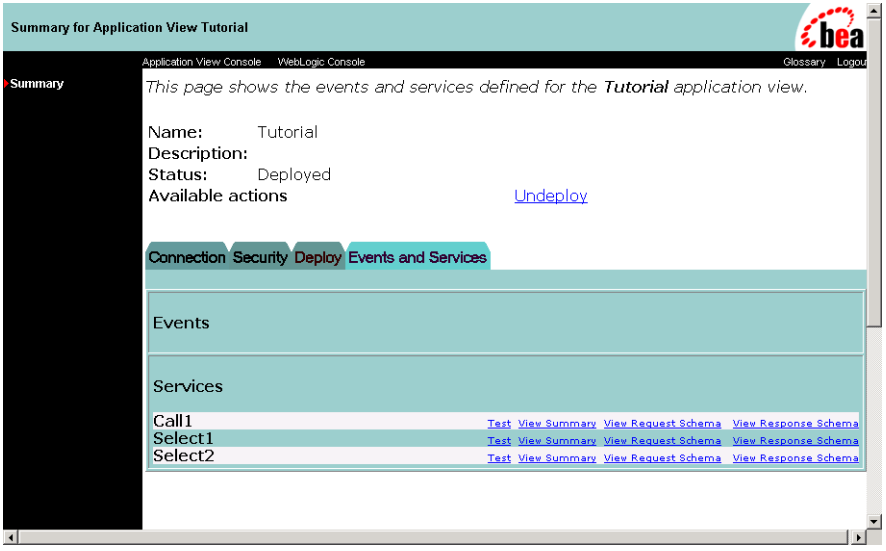
- Click **Browse Data Sources** to select a data sources from the binding configuration.
- Click **Browse Procedures** to select a procedure from the data source.
- Click **Browse Parameters** to specify the parameter values for the procedure.
  ❖If you leave a parameter value blank you are prompted for it at runtime.
- Click **Add** at the bottom of the screen to add the call procedure to the application view.

12. Click **Continue** in the Application View Administration screen when you have finished defining all the services for the application view. The following screen is displayed:



13. Click **Deploy** to deploy the application view.
    - ❖ You can change the Maximum Pool Size value to a value less than the default value of 10 (for example 2 or 3). Otherwise, leave the default values.

The following screen is displayed:



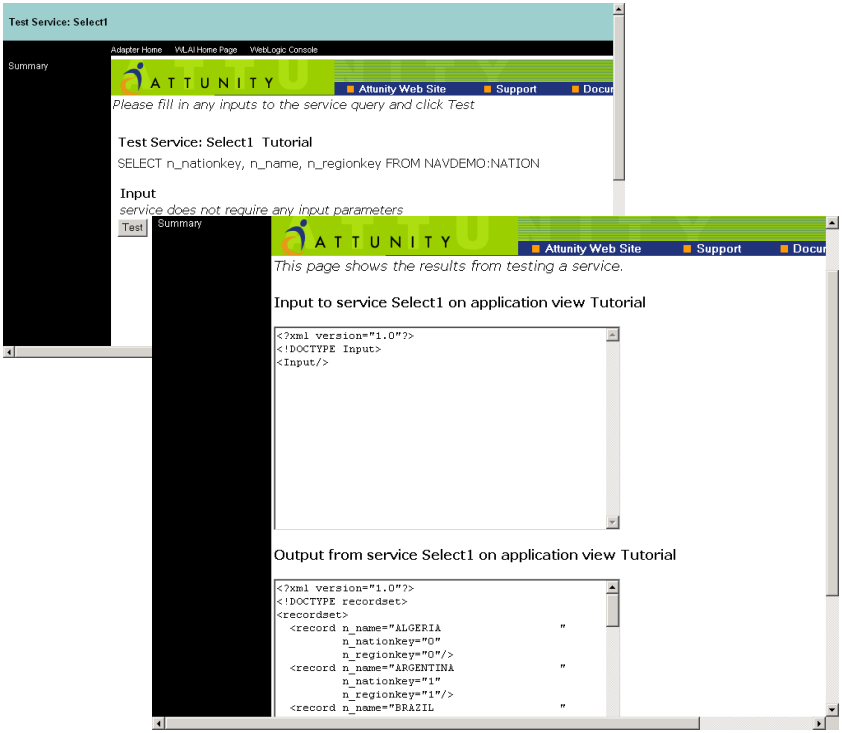
- To edit the application view in order to add new services, the application view cannot be deployed. Click Undeploy to enable a view to be edited.

  The contents of a service (such as the SQL in a SELECT statement) cannot be edited. The configuration of the application view can be edited and services can be removed and new services added.

14. The services in the application view can be tested by clicking **Test** for the service.

Testing a Select Service Without Parameters

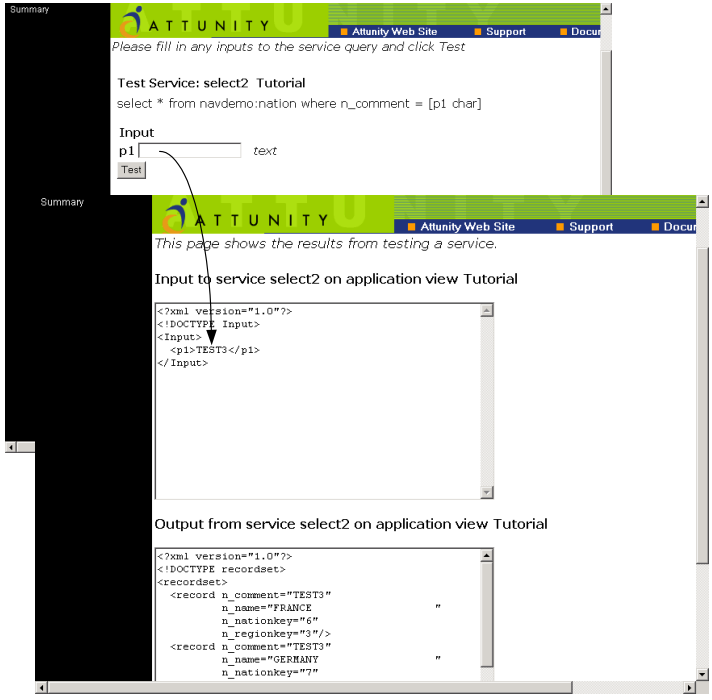
Click **Test**. The Test Service screen is displayed. Click **Test** in this screen to display the results of the service after it is executed.



The results show the input and the output in XML format. In this case there was no input, only output.

Testing a Select Service With Parameters

Click **Test**. The Test Service screen is displayed. Enter valid parameter values in the Input text boxes and then click **Test** in this screen to display the results of the service after it is executed.



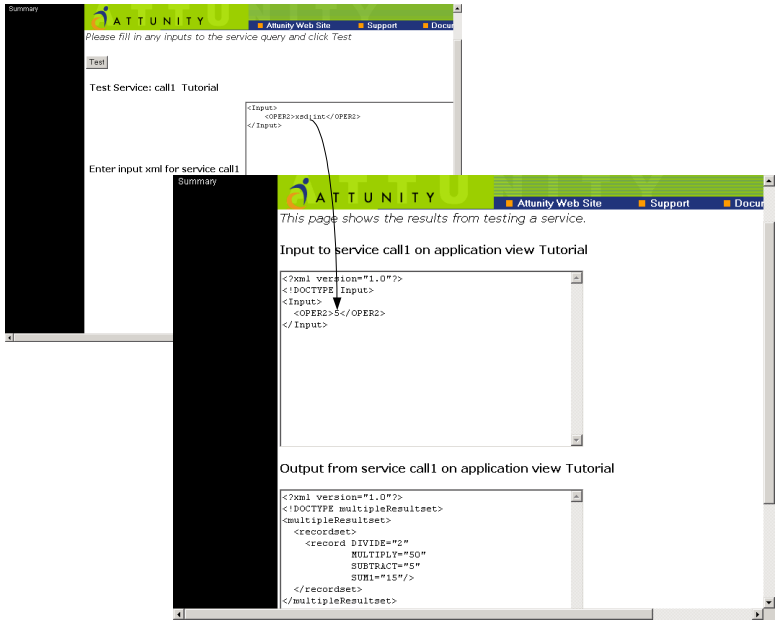
The results show the input and the output in XML format. In this case the value TEST3 is used for input. Thus the output is for the query:

```
select * from navdemo:nation
  where n_comment = 'TEST3'
```

Testing a Call Service With Parameters

Click **Test**. The Test Service screen is displayed. Replace the XML string with valid parameter values in the text box and then click

Test in this screen to display the results of the service after it is executed.



The results show the input and the output in XML format. In this case the string "xsd:int" was changed to the value 5 for input. Thus the output for the call statement:

```
call prc_samples:math_simple(10,5)
```

(The parameter value 10 was defined as part of the service definition.)

To return to the Application View Console screen, where the application views are listed, click the link at the top of the page.

Using Adapters that Include Events

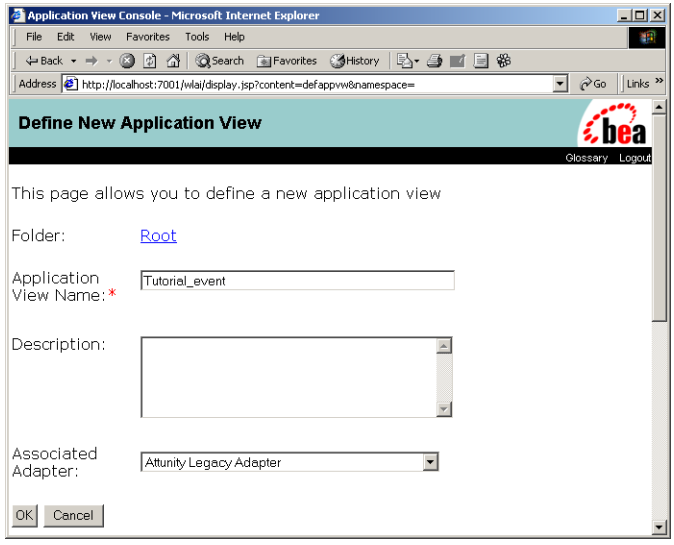
The following tutorial shows how to build a WebLogic application view to set up events, using an Attunity Connect application adapter that supports events specified in the binding configuration.

In this tutorial, the orders adapter sample, supplied with Attunity Connect is used. For details about how to set up this sample, refer to the readme file in *NAVROOT*\Samples\Adapters\Orsersys.

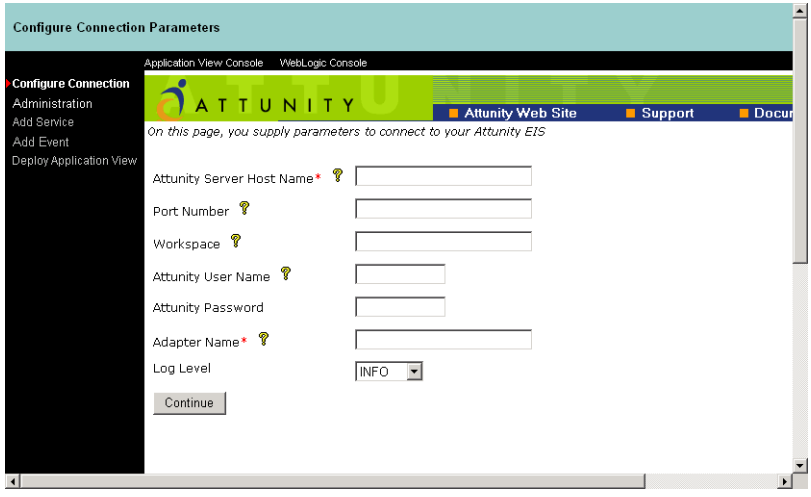
- *NAVROOT* is the directory where Attunity Connect is installed.

▶ To connect to the orders application adapter using the Attunity Legacy Adapter:

1. In the WebLogic Define New Application View window, supply a name for the adapter and select Attunity Legacy Adapter as the Associated Adapter.



2. Click **OK**. The following screen is displayed:



3. Enter the following parameters:

   Attunity Server Host Name – Enter the name or address of the machine where the Attunity Connect daemon is running.

   - ❖ If the adapter to be accessed is defined in the binding configuration on the local machine, the daemon must be running on this machine. In this case you can specify localhost as the host name.

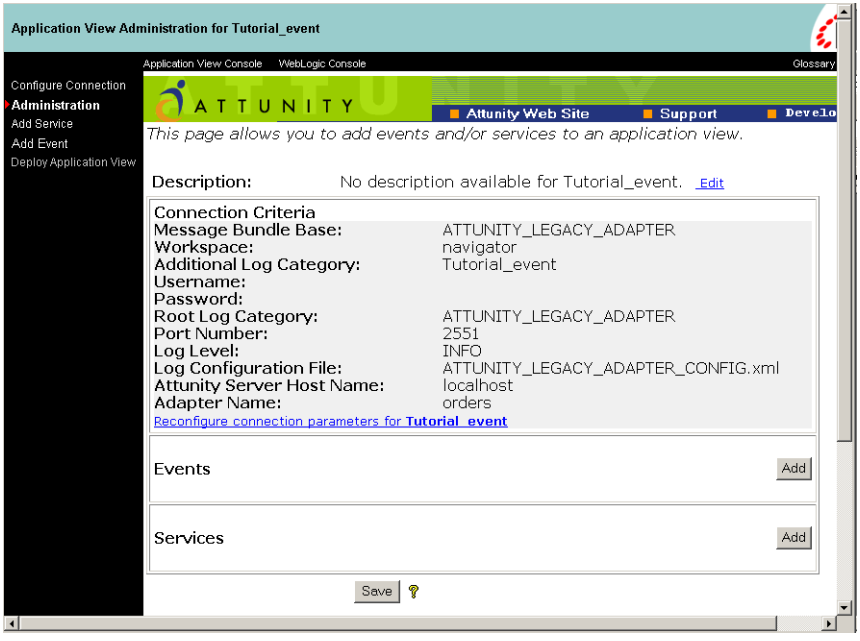
   Adapter Name – Enter the name of the adapter as defined in the binding configuration of the default workspace for the server specified in the Attunity Server Host Name field.

   - ❖ The adapter name is case-sensitive.

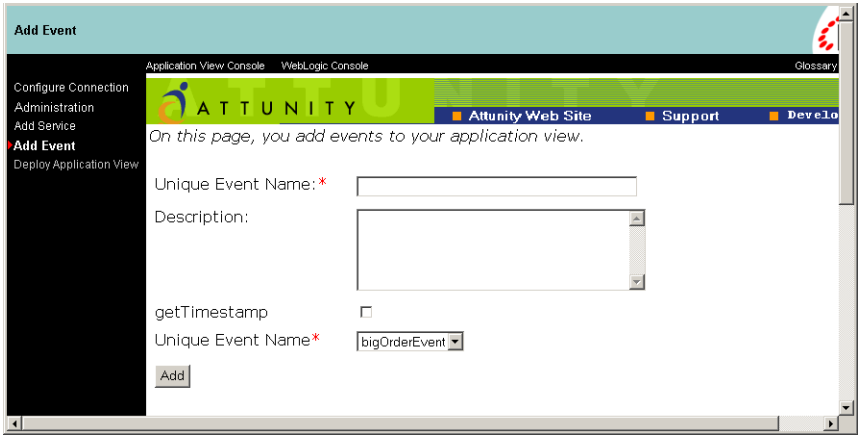
   The remaining fields will default to the Attunity Connect defaults.

   In this tutorial, the adapter is called “orders”.

4. Click **Continue**. The following screen is displayed:

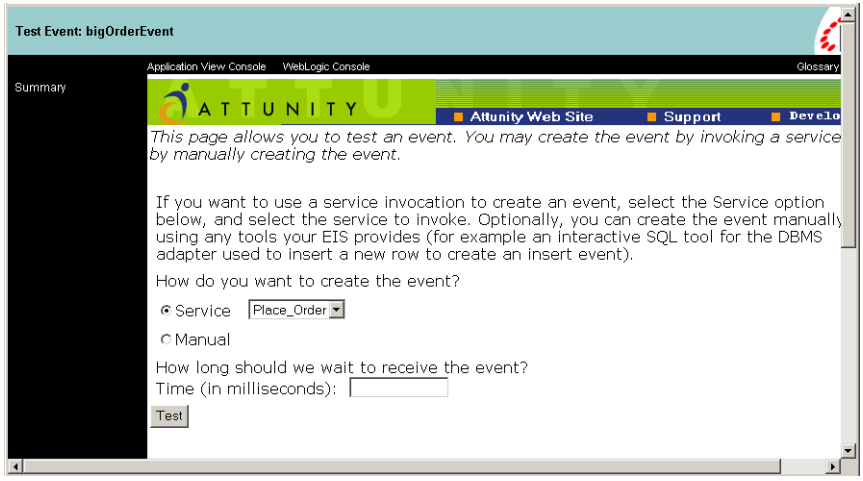


5. In the Events area, click **Add** to add an event to the application view. The following screen is displayed:



6. In the Add Event screen, enter a unique name for the event and select the interaction you want for this event, from the drop-down list.
7. Click **Add**. The added event now appears in the Application View Administration screen.
8. Click **Save** to save the definitions and either continue adding services and/or events or click **Continue** when you have finished defining all the services and events for the application view.
   - ❖ For this tutorial, define a service using the placeOrder interaction. This service will be used as the trigger to test the event.
9. Click **Deploy** in the Deploy Application View, to deploy the application view.

10. The events in the application view can be tested by clicking **Test** for the event. The following screen is displayed:



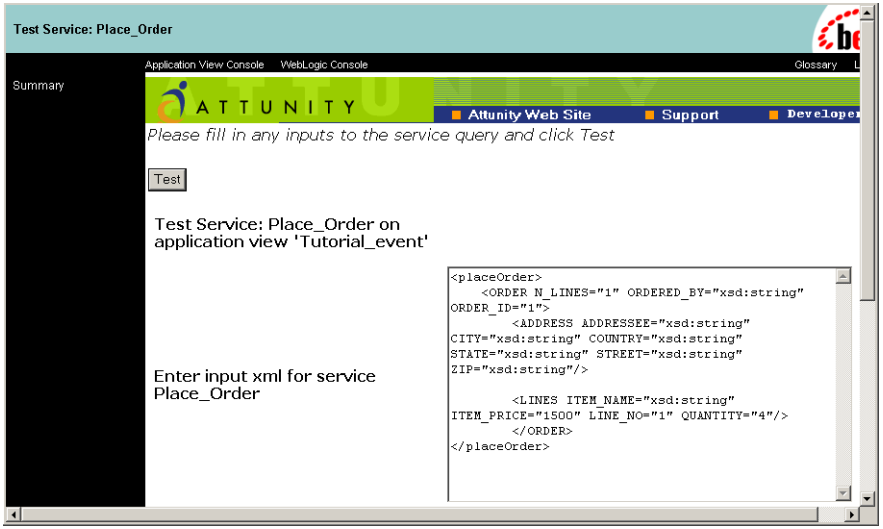
You can test the event in one of the following ways:

- Run a predefined service to trigger the event.
- Wait for a service to be run from another application.

11. Specify the amount of time to wait before timing out. For example, specify 20000 milliseconds.
12. Replace the XML strings with valid parameter values in the text box.

    In this example, the event is triggered when an order is received. If the value of the order is more than 1000, the order is rejected.

Change the xsd:int and xsd:double values in the XML to valid values:



13. Click **Test** to display the results.

To return to the Application View Console screen, where the application views are listed, click the link at the top of the page.

Documentation

Help for using the Attunity Legacy Adapter is provided as part of the GUI.

Full documentation for Attunity Connect is available at the Attunity website (via the Documentation link in the Attunity Legacy Adapter Screens) or with the product, installed on the server.

Known Restrictions

The following are some of common errors and their solutions:

- When using the Attunity Legacy Adapter with Attunity Connect version 3.1, the adapter type defined in the connection configuration on the server, **must** be “query”.
- Adapter names are case-sensitive. The case used in the binding configuration must be used in WebLogic.
- It is recommended that the daemon server mode is set multiClient.
- The Navigator daemon workspace should be used. If another workspace is used, it is recommended that it is configured as multiClient.
- The following restrictions apply to stored procedures:
  - When testing an Attunity Connect stored procedure without input parameters, for an application view using a query adapter, remove the line “`No complex type`” from the input XML box.
  - The query adapter only supports stored procedures that do not return result sets.
  - Parameter data types for Attunity Connect stored procedures are reported as bin (unknown data type). Change the word bin to the valid data type of the parameter.
- CallProcedure does not support default values.